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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,531	09/26/2003	Wayne Castleberry	X-9425	6510

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EXAMINER

GELLNER, JEFFREY L

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/670,531

Applicant(s)

CASTLEBERRY, WAYNE

Examiner

Jeffrey L. Gellner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23, 25, 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC §103*

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Pruitt (US 2,988,441) in view of Garrett (US 5,617,672).

As to Claim 1, Pruitt discloses a horticultural growing medium (see title) comprising a flexible diphenylmethane diisocyanate foam material (col. 5 lines 24-46 in particular “4,4’ - methylenebis (phenyl isocyanate)” of line 39), the horticultural medium being capable of supporting plant growth (col. 1 lines 60-66). Not disclosed is the foam without filler and having a CEC of from 1.0 to 1.5. Garrett, however, discloses the use of a foam without filler to grow plants (col. 7 lines 58-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium of Pruitt by having without filler as disclosed by Garrett so that the medium could be used for hydroponic (see Garrett col. 7 lines 58-65) so as to increase the use of the foam. The foam without filler would inherently have a CEC of from 1.0 to 1.5.

As to Claim 2, Pruitt as modified by Garrett further disclose the CEC at 1.25 (inherent).

As to Claims 3 and 5, Pruitt as modified by Garrett further disclose 4,4’ diphenylmethane diisocyanate (“4,4’ - methylenebis (phenyl isocyanate)” of col. 5 line 39 of Pruitt).

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As to Claim 4, the limitations of Claim 1 are disclosed as described above. Not disclosed is the diphenylmethane diisocyanate being polymeric. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by making the foam polymeric so as to meet a particular purpose.

As to Claim 6, Pruitt as modified by Garrett further disclose a foam with a pH of from 6.8 to 7.8 (inherent in the foam).

As to Claim 7, the limitations of Claim 1 are disclosed as described above. Pruitt as modified by Garrett further disclose the foam material highly porous (Pruitt at col. 3 lines 5-9). Not disclosed is the foam maintaining a 60 to 40 air water ratio. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam maintaining a 60 to 40 air water ratio so as to meet the needs for a desired plant species being grown.

As to Claims 8 and 9, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with at least 50% of the pores with a volume ranging in size between 10 and 200 microns or 40 to 90 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with at least 50% of the pores with a volume ranging in size between 10 and 200 microns or 40 to 90 microns so as to meet the needs for a desired plant species being grown.

As to Claim 10, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging from 20-25% foam vol. and in a size from 0.2 to 10 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with

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pores ranging from 20-25% foam vol. and in a size from 0.2 to 10 microns so as to meet the needs for a desired plant species being grown.

As to Claim 11, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging from 25-35% foam vol. and in a size from 300 to 800 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with pores ranging from 25-35% foam vol. and in a size from 300 to 800 microns so as to meet the needs for a desired plant species being grown.

As to Claim 12, Pruitt as modified by Garrett further disclose the foam substantially sterile (inherent in the foam).

As to Claim 13, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam with pores ranging about 30% foam vol. and in a size from 300 to 800 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with pores ranging from 30% foam vol. and in a size from 300 to 800 microns so as to meet the needs for a desired plant species being grown.

As to Claims 14 and 15, the limitations of Claim 1 are disclosed as described above. Not disclosed is the foam material having a total porosity ranging from 85 to 95% or 90 to 92%. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the medium of Pruitt as modified by Garrett by having the foam with total porosity ranging from 85 to 95% or 90 to 92% so as to meet the needs of a desired plant species being grown.

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Claims 16-23, 25, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over US Rubinate/Suprasec in view of Pruitt (US 2,988,441).

As to Claims 16, 25, and 26, Rubinate/Suprasec discloses a sterile, or substantially sterile, hydrophilic unfilled foam material made of diphenylmethane diisocyanates (for example, Rubinate 1670, 1680, and 1790) that would have at least 50% of its pores by foam volume ranging in size between 10 and 200 microns with a cation exchange capacity ranging from 1.0 to 1.5, the foam material having a total porosity ranging from about 85 to 95% and a pH ranging from 6.8 to 7.8. Not disclosed is the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth. Pruitt, however, discloses the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth (col. 3 line 39; col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the foam of Rubinate/Suprasec by using as a medium capable of supporting plant growth as disclosed by Pruitt so as to increase the use of the foam product.

As to Claims 17 and 19, Rubinate/Suprasec as modified by Pruitt further disclose 4,4' diphenylmethane diisocyanate ("4,4' - methylenebis (phenyl isocyanate)" of col. 5 line 39 of Pruitt).

As to Claims 18, Rubinate/Suprasec as modified by Pruitt further disclose the foam as polymeric (inherent).

As to Claim 20, Rubinate/Suprasec discloses a substantially sterile unfilled foam material made of polymeric diphenylmethane diisocyanates (for example, Rubinate 1670, 1680, and

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1790) that would be one of the group listed having at least 50% of its pores by foam volume ranging in size between 10 and 200 microns with a cation exchange capacity ranging from 1.0 to 1.5, the foam material having a total porosity ranging from about 90 to 92%. Not disclosed is the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth. Pruitt, however, discloses the use of diphenylmethane diisocyanates as a medium capable of supporting plant growth (col. 3 line 39; col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the foam of Rubinate/Suprasec by using as a medium capable of supporting plant growth as disclosed by Pruitt so as to increase the use of the foam product.

As to Claims 21 and 22, Rubinate/Suprasec as modified by Pruitt further disclose the foam in sheets or blocks (Pruitt at col. 7 lines 59-60)

As to Claim 23, Rubinate/Suprasec as modified by Pruitt further disclose the CEC at 1.0 (inherent in the foam).

### ***Response to Arguments***

Applicant's arguments filed 28 December 2004 have been fully considered but they are not persuasive. The crux of Applicant's arguments are: (1) Garrett is not a proper reference because it discloses ureaformaldehyde foam and the polyurethane foam of the instant application (Remarks page 6, 2<sup>nd</sup> para.); (2) not obvious in Pruitt to eliminate the filler (Remarks page 6, 4<sup>th</sup> para.); (3) sterility is not inherent to filled foams nor is there any mention of sterility in Pruitt (Remarks page 7, 1<sup>st</sup> incomplete para.); (4) the present invention uses a unique unfilled polyurethane foam with unexpected properties that support plant growth (Remarks page 7, 1<sup>st</sup>

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complete para.); (5) Neither Pruitt or Garrett disclose a foam with specific pH, CEC, pore size, or porosity properties (Remarks page 7, 2<sup>nd</sup>-6<sup>th</sup> paragraphs); and (6) Rubinate/Suprasec does not disclose a sterile foam (Remarks page 8, 1<sup>st</sup> para.).

As to argument (1), Examiner considers Garrett a proper reference because it is a teaching reference that discloses that it was known to one of ordinary skill in the art at the time of the invention that one can grow plants with foams that do not have fillers. Pruitt and Rubinate/Suprasec disclose the foam of the instant invention.

As to argument (2), Examiner considers it obvious in Pruitt to eliminate the filler when the foam is used in a hydroponic system as taught by Garrett at col. 7 lines 58-65.

As to argument (3), Examiner considers any foam used in clean environment to be sterile or substantially sterile as defined by Applicant at page 7, lines 1-3. There is motivation in any plant growing system, particularly those using nutrient solutions, to maintain a clean, or sterile, environment so that plant growth is optimized.

As to arguments (4) and (5), Examiner notes the foam of the instant invention is “foamed in a conventional manner” according to the specification at page 6, last two lines. Hence, any properties of the foam are inherent to a known material. It is settled law that a new use for an old composition may be patentable (see MPEP 2112.02). For the instant application Examiner considers the foam composition to be anticipated by both Pruitt and Rubinate/Suprasec. As to the use, Examiner notes that “when the claim recites using an old composition or structure and the “use” is directed to a result or property of that composition or structure, then the claim is anticipated” (MPEP 2112.02 citing *In re May*, 574 F.2d 1082). Additionally, Garrett teaches the use of foams as growing media.



As to argument (6), Examiner considers any foam made in a clean environment to be sterile or substantially sterile as defined by Applicant at page 7, lines 1-3. Manufactures have a motivation to produce a substantially pure product.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

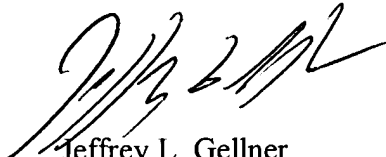
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeffrey L. Gellner whose phone number is 703.305.0053 (after 4 April 2005 use: 571.272.6887). The Examiner can normally be reached Monday through Thursday from 8:30 am to 4:00 pm. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Peter Poon, can be reached at 703.308.2574. The official fax telephone number for the Technology Center where this application or proceeding is assigned is 703.872.9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.



Jeffrey L. Gellner  
Primary Examiner